

## ABSTRACT OF THE DISCLOSURE

An impedance measuring apparatus comprising an automatic balanced bridge has four numerically controlled oscillators that supply

5      sine-wave signals and cosine-wave signals to the quadrature detector and vector modulator of the narrow-band amplifier inside the automatic balanced bridge. The frequency or phase of the output signals of the four numerically controlled oscillators are updated by numeric control from the outside. The four numerically controlled oscillators of the

10     impedance measuring apparatus are oscillators whose frequency or phase is changed a pre-determined time after they have been controlled from the outside. Furthermore, the impedance measuring apparatus has control means with which the change in the frequency or the phase of the output signals of the four numerically controlled oscillators is

15     synchronized.